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10/564,006	07/03/2006	Wolfgang Kling	AP 10729	7016

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09/25/2009

EXAMINER

BOWES, STEPHEN M

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/564,006	Applicant(s) KLING ET AL.	
	Examiner STEPHEN BOWES	Art Unit 3657	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 January 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Germany on 7/8/2003. It is noted, however, that applicant has not filed a certified copy of the German application as required by 35 U.S.C. 119(b). The only noted certified document is a diagram appears to be distinct from the application.

Drawings

2. The drawings are objected to because Figure 2 has been left untranslated from German. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claim 19 is objected to because of the following informalities: Applicant recites “one ore” where “one or” was probably intended. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 19, 21, 23, 25-27, 32-33 and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohkubo et al (US 5,979,997).

As per claim 19, Ohkubo et al discloses a hydraulic brake control apparatus comprising a method for identifying hydraulic defects (Abstract) in electrohydraulic brake systems for motor vehicles including an electronic regulation and control unit (10), wheel brakes (82, 88, 110, 116) equipped with one or more inlet valves (78, 84, 106, 112) and outlet valves (90, 92, 118, 120) and at least one pressure source (42), the method comprising: identifying a defect pattern by comparing several hydraulic and electric nominal values with actual values (222; Col. 15, lines 10-18) measured by sensors (74, 98) in an electronic regulation and control unit; selecting a testing routine (Fig. 2A, 2B; Col. 13, lines 20-26) which corresponds to the defect pattern and execution thereof; localizing one more individual defects causing the defect pattern (Fig. 3A; Col. 13, lines 11-15); and selecting an operating mode (Fig. 3B; Col. 13, lines 15-

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16) which takes into account the on ore more individual causing defects and operation of the brake system in this operating mode.

As per claim 21, Ohkubo et al discloses the method according to claim 19, wherein a coordinated termination of the performed testing routine is arranged for in the event of an interaction of the operator (300; Col. 16, lines 55-59).

As per claim 23, Ohkubo et al discloses the method according to claim 19, wherein the testing routine checks the hydraulic components which are associated with a defect pattern in terms of operability or modifies control strategies in order to find the individual causing defect (Fig. 3A; Col. 13, lines 11-15).

As per claim 25, Ohkubo et al discloses the method according to claim 19, wherein after the successful localization of the individual causing defect, additional, newly identified defect patterns are processed (RETURN step allows for new problems to be detected during following cycle, Fig. 3A).

As per claim 26, Ohkubo et al discloses the method according to claim 19, wherein after an abortive localization of the individual causing defect, a limited quantity of individual defects will be taken into account by an operating mode until an appropriate testing situation is available to localize the individual causing defect (The apparatus searches for and corrects problems as it finds them. If it doesn't find a problem in one place, it goes onto the next, Fig. 3A).

As per claim 27, Ohkubo et al discloses the method according to claim 19, wherein the defect pattern is represented by an actual pressure value measured by a

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pressure sensor and differing in at least one wheel brake from a preset nominal pressure value (222; Col. 15, lines 10-18).

As per claim 32, Ohkubo et al discloses the method according to claim 19, wherein the pressure source is a master brake cylinder (14) with at least one piston (18), and the defect pattern is represented by a deviation of the actual pressure value determined in the master brake cylinder compared to the nominal pressure value that is expected on account of the measured displacement travel of the piston (Col. 13, lines 51-63).

As per claim 33, Ohkubo et al discloses an electrohydraulic brake system (Abstract) for a motor vehicle comprising: an electronic regulation and control unit (10); wheel brakes (82,88, 110, 116) equipped with inlet valves (78, 84, 106, 112) and outlet valves (90, 92, 118, 120); at least one pressure source (42); a device to identify a defect pattern by comparing several hydraulic and electric nominal values with actual values (222; Col. 15, lines 10-18) measured by sensors (74, 98) in the electronic regulation and control unit; a device for selecting a testing routine (Fig. 2A, 2B; Col. 13, lines 20-26) which corresponds to the defect pattern and execution thereof; a device for localizing an individual defect (Fig. 3A; Col. 13, lines 11-15) causing the defect pattern; and a device for selecting an operating mode (Fig. 3B; Col. 13, lines 15-16) which takes into account the individual causing defect, and for the operation of the brake system in this operating mode.

As per claim 36, Ohkubo et al discloses the device according to claim 33, wherein active tests in the brake system are performed or control strategies are modified in order to find the individual causing defect (Fig. 3A; Col. 13, lines 11-15).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkubo et al (US 5,979,997) in view of Schmidt et al (US 2001/0045772)..

As per claim 28, Ohkubo et al discloses the method according to claim 19, however they fail to disclose wherein the defect pattern is represented by a volume input in at least one wheel brake which exceeds the volume input that is predetermined by the constructive design of the wheel brake. Schmidt et al discloses a method and device for controlling a brake system wherein the defect pattern is represented by a volume input in at least one wheel brake which exceeds the volume input that is predetermined by the constructive design of the wheel brake ([0032]). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the brake control apparatus of Ohkubo et al by measuring fluid volume when the inlet valves are closed as taught by Schmidt et al in order to detect leaks.

As per claim 30, Ohkubo et al discloses the method according to claim 19, wherein the pressure source is a high-pressure accumulator (46), however they fail to

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disclose wherein the defect pattern is represented by a declining volume in the high-pressure accumulator, with the inlet valves being simultaneously closed. Schmidt et al discloses a method and device for controlling a brake system wherein the defect pattern is represented by a declining volume in the high-pressure accumulator, with the inlet valves being simultaneously closed ([0032]). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the brake control apparatus of Ohkubo et al by measuring fluid volume when the inlet valves are closed as taught by Schmidt et al in order to detect leaks.

8. Claims 22 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkubo et al (US 5,979,997) in view of Beck (US 2002/0088267).

As per claim 22, Ohkubo et al discloses The method according to claim 21, however they fail to disclose wherein the coordinated termination is performed by making the brake system adopt the same condition as before the commencement of the testing routine that is to be stopped. Beck discloses a method and device for controlling a setting element in a vehicle wherein the coordinated termination is performed by making the brake system adopt the same condition as before the commencement of the testing routine that is to be stopped ([0010]). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the hydraulic brake control apparatus of Ohkubo et al by resetting the test as taught by Beck in order to allow the test to be run again for updated information.

As per claim 35, Ohkubo et al discloses the device according to claim 33, , however they fail to disclose wherein the device for performing the coordinated

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termination by making the brake system adopt the same condition as before the commencement of the testing routine that is to be stopped. Beck discloses a method and device for controlling a setting element in a vehicle wherein the device for performing the coordinated termination by making the brake system adopt the same condition as before the commencement of the testing routine that is to be stopped ([0010]). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the hydraulic brake control apparatus of Ohkubo et al by resetting the test as taught by Beck in order to allow the test to be run again for updated information.

9. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkubo et al (US 5,979,997) in view of Lee et al (US 4,989,923).

As per claim 24, Ohkubo et al discloses the method according to claim 23, however they fail to disclose wherein the testing routines run without being noticed by the operator and maintain a maximum possible braking power, or are alternatively performed when the motor vehicle is in a condition in which the effects of the testing routines performed will not induce any dangerous driving situation. Lee et al discloses an ABS reference speed determination wherein the testing routines run without being noticed by the operator and maintain a maximum possible braking power, or are alternatively performed when the motor vehicle is in a condition in which the effects of the testing routines performed will not induce any dangerous driving situation (Running tests in then background is inherently done without requiring operator intervention, Col. 4, lines 57-66). Therefore it would have been obvious to one of ordinary skill in the art

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at the time the invention was made to modify the brake control apparatus of Ohkubo et al by automatically running diagnostic tests in the background as taught by Lee et al in order to reduce stress on the operator.

10. Claim 29 is are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkubo et al (US 5,979,997) in view of Inoue et al (US 6,375,282).

As per claim 29, Ohkubo et al discloses the method according to claim 19, however they fail to disclose wherein the defect pattern is represented by a rising pressure value in at least one wheel brake in absence of a braking request of a driver. Inoue et al discloses a brake system wherein the defect pattern is represented by a rising pressure value in at least one wheel brake in absence of a braking request of a driver (Resolving an accidental braking scenario, Col. 9, lines 62-67). Ohkubo et al already measures the brake pressures (74; Col. 7, lines 20, 30) and would be capable of detecting accidental braking, as this problem would appear as an unexplained rise in brake pressure. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the hydraulic control apparatus of Ohkubo et al by providing instructions on how to resolve accidental braking as taught by Inoue et al in order to protect the operator by stopping the vehicle from braking uncontrollably. This modification is not the way in which Inoue et al resolves the problem, but rather the problem disclosed by Inoue et al, as Ohkubo et al is already capable of controlling brake pressure problems.

11. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkubo et al (US 5,979,997) in view of Koepff et al (US 2002/0050739).

As per claim 31, Ohkubo et al discloses the method according to claim 19, wherein the pressure source is a hydraulic motor-and-pump-assembly (42, 44), however they fail to disclose wherein the defect pattern is represented by a deviation of the measured performance under load from the predetermined performance under load or by an insufficient feed performance of the hydraulic motor-and-pump assembly. Koepff et al discloses a method and device for controlling wheel brakes wherein the defect pattern is represented by a deviation of the measured performance under load from the predetermined performance under load or by an insufficient feed performance of the hydraulic motor-and-pump assembly ([0046]). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the hydraulic brake control apparatus of Ohkubo et al by planning for a failure of the pump as taught by Koepff et al in order to allow emergency braking should the motor fail for any reason.

12. Claims 20 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkubo et al (US 5,979,997) in view of Böhm et al (US 6,318,819).

As per claim 20, Ohkubo et al discloses a method according to claim 19, however they fail to disclose wherein different priorities are assigned to the defect patterns, and in a coordinated termination of the performed testing routine is arranged for when a defect pattern with a higher priority appears. Böhm et al discloses a method for handling errors in an electronic brake system wherein different priorities are assigned to the defect patterns, and in a coordinated termination of the performed testing routine is arranged for when a defect pattern with a higher priority appears (Fig.

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2; Col. 6, lines 49-67). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the hydraulic brake control apparatus of Ohkubo et al by prioritizing errors as taught by Böhm et al in order to ensure that user safety is not compromised because a non-critical problem was dealt with while a more severe one was left untreated (Col. 6, lines 39-48).

As per claim 34, Ohkubo et al discloses the device according to claim 33, however they fail to disclose wherein an additional device is provided which assigns different priorities to the defect patterns and perform a coordinated termination of the performed testing routine when a defect pattern with a higher priority appears. Böhm et al discloses a method for handling errors in an electronic brake system wherein an additional device is provided which assigns different priorities to the defect patterns and perform a coordinated termination of the performed testing routine when a defect pattern with a higher priority appears (Fig. 2; Col. 6, lines 49-67). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the hydraulic brake control apparatus of Ohkubo et al by prioritizing errors as taught by Böhm et al in order to ensure that user safety is not compromised because a non-critical problem was dealt with while a more severe one was left untreated (Col. 6, lines 39-48).

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- a. Buschmann et al (US 2004/0260486), US equivalent of DE 10244762.

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b. Wuerth et al (US 2004/0025941), US equivalent of DE 10033909.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHEN BOWES whose telephone number is (571) 270-5787. The examiner can normally be reached on M-F 7:30am-5:00pm, alternating Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on (571) 272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bradley T King/
Primary Examiner, Art Unit 3657

/STEPHEN BOWES/
Examiner, Art Unit 3657